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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/008,389

11/06/2001

Nobuhiko Oda

YKI-0079

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7590

12/26/2002

CANTOR COLBURN, LLP
55 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002

EXAMINER

LE, THAO X

ART UNIT

PAPER NUMBER

2814

DATE MAILED: 12/26/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

10/008,389

Applicant(s)

ODA ET AL.

Examiner

Thao X Le

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 23 October 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 1 and 2 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: the 'insulating film 2' on page 10 line 26 should be read 'the insulating film 8'.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

2. Claims 3, 6-7, 10 are rejected under 35 U.S.C. 102(e) as being anticipated by US 6424012 to Kawasaki et al.

Regarding to claim 3, Kawasaki discloses a method for manufacturing a bottom gate-type thin film transistor on a transparent insulating substrate in fig. 1A-3C, comprising the step of: forming a gate electrode 102, fig. 1B, column 5 line 66, on a transparent substrate 101, fig. 1A, forming a gate insulating film 103a/103b, column 6 line 49, on gate electrode, forming a semiconductor layer 104, column 6 line 63, on gate insulating film, forming a mask 108/109/114¹⁰⁷ on semiconductor layer corresponding to gate electrode, doping impurities selectively into

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semiconductor layer using mask, column 8 lines 6-9, thoroughly removing the mask used in the doping so that no layer having an impurity density of 10^{13} atom/cc or greater remain on the semiconductor layer, column 8 line 53-55 and column 9 line 11, and forming an interlayer insulating film 123 directly on semiconductor layer after removal of mask, fig. 3B.

Regarding to claim 7, Kawasaki discloses a method for manufacturing a bottom gate-type thin film transistor on a transparent insulating substrate in fig. 1A-3C, comprising the step of: forming a gate electrode 102, fig. 1B, column 5 line 66, on a transparent substrate 101, fig. 1A, forming a gate insulating film 103a/103b, column 6 line 49, on gate electrode, forming a semiconductor layer 104, column 6 line 63, on gate insulating film, forming a mask 108/109/114 on semiconductor layer corresponding to gate electrode, doping impurities selectively into semiconductor layer using mask, column 8 lines 6-9, thoroughly removing the mask used in the doping so that no layer having an impurity density of 10^{13} atom/cc or greater remain on the semiconductor layer, column 8 line 53-55 and column 9 line 11, and forming an interlayer insulating film 123 on semiconductor layer after removal of mask, fig. 3B.

Regarding to claims 6, 10, Kawasaki discloses a method for manufacturing a bottom gate-type thin film transistor wherein the mask 108 of at least some of the plurality of thin film transistor is shorter than the gate electrode 102 in a channel 119 length direction, and a region doped with impurities in the semiconductor layer 104 thereof overlays the gate electrode, fig. 3A.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claim 3 is rejected under 35 U.S.C. 102(a) as being anticipated by Applicant Admitted Prior Art (APA).

Regarding to claim 3, APA discloses in the specification pages 1-4, fig. 1A-1E, a method for manufacturing a bottom gate-type thin film transistor on a transparent insulating substrate, comprising the step of: forming a gate electrode 52, page 2 line 7, on a transparent substrate 51, page 2 line 6, forming a gate insulating film 63(53), fig. 1A, page 2 line 8, on gate electrode, forming a semiconductor layer 54, page 2 line 11, on gate insulating film, forming a mask 56/57/58, fig. 1B-1D, on semiconductor layer corresponding to gate electrode, doping impurities selectively into semiconductor layer, fig1B-1D, using mask, and forming an interlayer insulating film 59 directly on semiconductor layer, page 3 line 11, after removal of mask, fig. 1E.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 4-5, 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6424012 to Kawasaki in view of US Patent 5,814,530 to Tsai et al.

Regarding to claims 4-5, 8-9, Kawasaki does not expressly disclose the method further comprising the steps of removing the residue of mask together with a native oxide film formed on semiconductor layer by a dilute hydrofluoric acid before formation of mask.

However, Tsai reference discloses the method further comprising the steps of removing the residue of mask together with a native oxide film formed on semiconductor layer by a dilute hydrofluoric acid, step 312 fig. 9, column 13 line 2, before formation of mask. At the time of the invention was made; it would have been obvious to one of ordinary skill in the art to combine the cleaning the native oxide method of Tsai with APA, because it would have helped to ensure the a stable interface can be formed with the next layer, column 13 line 3-4.

Response to Arguments

6. Applicant's arguments filed 10/23/02 have been fully considered but they are not persuasive. The applicant argues that the APA does not disclose 'forming an insulating film directly on semiconductor layer, after removal of mask'. This is not persuasive because APA discloses in fig. 1D-1E, an insulating film 59 is formed directly on the semiconductor layer 54.

Conclusion

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7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thao X Le whose telephone number is 703-306-0208. The examiner can normally be reached on M-F from 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael M Fahmy can be reached on 703-308-4918. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

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Thao X. Le
December 18, 2002



PHAT X. CAO
PRIMARY EXAMINER